OBJECTIVES: To characterize safety and efficacy outcomes of albumin-bound paclitaxel (*nab*-paclitaxel) in MBC in the United States since its approval in 2005 using health insurance claims data. **METHODS:** A retrospective claims analysis was conducted using the Optum Research Database (United Health affiliate). The analysis included females aged ≥ 18 years diagnosed with MBC (≥ 2 claims of BC diagnosis separated by ≥ 30 days and ≥ 2 claims of metastatic spread) prior to *nab*-paclitaxel initiation who had complete medical coverage and pharmacy benefits, ≥ 6 months of continuous enrollment in a US health insurance plan from January 2005 through September 2012, no other primary malignancy, and no prior *nab*-paclitaxel therapy. Data were supplemented by Social Security Death Index sources. Cohorts were determined by line of therapy, *nab*-paclitaxel regimen, and schedule. Descriptive statistics were used to characterize outcomes. Endpoints included time to treatment discontinuation (TTD), overall survival (OS), and safety. **RESULTS:** Among 664 eligible patients, most were between 40-69 years of age (88%) and had received *nab*-paclitaxel as ≥ second-line therapy (74%), monotherapy (61%), and weekly (71%). Bevacizumab (22%) and HER2-targeted therapies (9%) were used as combination partners. Median TTD and OS were 6.1 and 17.4 months, respectively. By line of therapy (first, second, and ≥ third), TTD was 7.1, 6.6, and 5.3 months and OS was 22.7, 17.4, and 15.1 months. Median OS was similar when *nab*-paclitaxel was used in combination or as monotherapy (18.7 and 16.8 months) and weekly or every 3 weeks (18.6 and 17.4 months). No new safety signals were observed. **CONCLUSIONS:** Outcomes in this real-world patient population were consistent with clinical trial data, affirming the effectiveness and manageable safety profile of *nab*-paclitaxel in patients with MBC. This analysis will also help evaluate the benefit of *nab*-paclitaxel in patients aged ≥ 70 years.

PCN19

COST-UTILITY ANALYSIS OF DABRAFENIB/TRAMETINIB COMBINATION (D+T) FOR BRAFV600 MUTATION-POSITIVE METASTATIC MELANOMA (MM) FROM THE UNITED KINGDOM (UK) NATIONAL HEALTH SERVICE (NHS) PERSPECTIVE

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OBJECTIVES: Estimate the incremental cost-effectiveness ratio (ICER) of D+T versus vemurafenib and dacarbazine for BRAFV600 mutation-positive MM from the UK NHS perspective. **METHODS:** A partitioned-survival model with 3 states (progression-free survival [PFS], post-progression survival, and death) and a lifetime horizon was developed. Treatment benefits were measured as gains in quality-adjusted life-years (QALYs). PFS and overall survival (OS) were derived from indirect treatment comparisons (ITCs) of D+T (from the Phase II BRF113220 study) versus vemurafenib (BRIM-3) and dacarbazine (BREAK-3). Latest OS data were adjusted for confounding effects of treatment switching, permitted upon progression in all studies. Safety data were from aforementioned trials. Costs were from the literature, a physician survey, and assumptions. Costs of medications to the NHS (incorporating available patient-access schemes), post-study anticancer therapy, routine and adverse event (AE) management, treatment initiation, and death were included. Utility data for D+T were derived from BREAK-3, with adjustment for differences in response and incidence of AEs. Deterministic and probabilistic sensitivity analyses were performed. **RESULTS:** ITCs showed D+T significantly improved PFS versus vemurafenib (hazard ratio [HR] 0.38; 95% CI, 0.19–0.74) and dacarbazine (0.14; 0.08–0.28) and suggested improved OS, although not statistically significant (0.42; 0.09–1.97 versus vemurafenib and 0.26; 0.05–1.27 versus dacarbazine). Treatment with D+T was associated with a gain in QALYs versus vemurafenib and dacarbazine. The ICER for D+T was £50,603/QALY versus vemurafenib and £49,804/QALY versus dacarbazine. **CONCLUSIONS:** Based on results of a Phase II trial and an ITC, D+T offers improved PFS and OS versus vemurafenib and dacarbazine. Further, considering NICE's criteria for life-extending, end-of-life treatments, D+T may be cost-effective compared with vemurafenib, the NHS's current standard of care for patients with BRAFV600 mutation-positive MM, although conclusions must await ongoing modelling on the basis of the Phase III, COMBI-D trial.

PCN20

HAVE NEW THERAPIES CHANGED THE FACE OF METASTATIC CASTRATE-RESISTANT PROSTATE CANCER TREATMENT IN CANADA?

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OBJECTIVES: Treatment for metastatic castrate-resistant prostate cancer (mCRPC) has evolved rapidly with the introductions of abiraterone, denosumab and cabazitaxel in 2011 and enzalutamide in 2013 and the subsequent funding of these new agents. Our objective is to describe the treatments used after a diagnosis of mCRPC in Canada. **METHODS:** The study used ONCO-CAPPS, a proprietary database of patient chart abstractions collected through regular survey of physician panels. The data includes the stage of the disease along with a summary of treatment from diagnosis. Data from 2011 and 2013 were used to identify patients with mCRPC and to describe the treatments used. Hormone therapies are grouped as follows: H1 is Luteinizing-Hormone-Releasing Hormone analogs, H2 is anti-androgens while H3 is ketoconazole, prednisone, abiraterone or enzalutamide. Chemotherapy includes docetaxel and cabazitaxel. Pamidronate, zoledronic acid or denosumab are bone-targeted agents (BTA). **RESULTS:** All patients with mCRPC are treated with a combination of hormones, with or without docetaxel and/or a BTA. In 2011, the proportions of mCRPC patients who were treated with regimens containing H1, H2 and H3 were 93%, 43% and 12% respectively. In 2013, the proportions of mCRPC patients who were treated with regimens containing H1, H2 and H3 were 86%, 37% and 35% respectively. Between 2011 and 2013, the proportions of patients treated with a regimen containing docetaxel increased from 14% to 22% and the proportions of patients receiving an injectable BTA increased from 42% to 66%. In this period, the average age of patients treated with docetaxel was 69 years while that of patients treated with an H3 was 73 years. **CONCLUSIONS:** With the introduction of the new agents, a greater proportion of mCRPC patients are treated with a regimen containing docetaxel, an H3 and a BTA. Docetaxel-treated patients are younger than those receiving an H3.

PCN21

EVOLVING TREATMENT PATTERNS IN METASTATIC MELANOMA IN CANADA

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OBJECTIVES: Treatment for metastatic melanoma (mM) has evolved rapidly with the recent approval and reimbursement of new therapies. At the end of 2013, four new therapies, vemurafenib, ipilimumab, drabrafenib and trametinib were available for treatment of specific groups of patients with metastatic melanoma. Our objective is to compare the drug treatment sequences at centers in Canada during the time periods prior to and after availability of the new therapies. **METHODS:** The study used ONCO-CAPPS, a proprietary database of patient chart abstractions collected through regular survey of physician panels. The data includes demographic details as well as disease markers, and a summary of the patients' cancer treatments from the time of diagnosis. Data from the time periods 2007 and 2013 were used to identify patients with metastatic melanoma and document their sequence of treatments. Conventional treatments include the older therapies: dacarbazine (DTIC), carboplatin-paclitaxel, lomustine, interferon and interleukin-2. **RESULTS:** In 2007, 53 patients with mM were treated in first-line (1st) line and the majority received a conventional therapy. Twenty-one of these patients progressed and received second-line (2nd) line therapy; 62% of them received a conventional therapy while 38% received an investigational agent. In 2013, 157 patients with mM were treated in 1stline; 47%, 10% and 43% of these received a conventional therapy, an investigational agent and a new therapy, respectively. Of those who progressed, 18%, 11% and 71% received a conventional therapy, an investigational agent and a new therapy, respectively. **CONCLUSIONS:** With the availability of newer options, a greater proportion of patients are being treated with these agents. The proportion of patients being treated with an investigational agent in 2nd line has decreased. Older agents continue to be used and the use of the newer therapies is dependent on patient characteristics and reimbursement guidelines.

PCN22

THE EFFECT OF GROUNDBREAKING MEDICAL THERAPY ON THE INCIDENCE OF DISEASE: A CASE STUDY OF RITUXIMAB AND NON-HODGKIN'S LYMPHOMA

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OBJECTIVES: The development of new medical therapies can have a profound effect on the epidemiology of a disease, especially when that development represents the first efficacious treatment. Rituximab was the first monoclonal antibody therapy for cancer, gaining FDA approval in 1997 in the United States (US) to treat non-Hodgkin's lymphoma (NHL). Rituximab's positive impact on mortality has been well-documented. The potential effect of rituximab on the incidence of NHL is necessary to understand the full epidemiological impact of the drug. This study aimed to investigate that effect. **METHODS:** Age-adjusted incidence rates of NHL were modeled over time using Poisson regression, allowing a different slope for change in yearly rate before and after 1997. This allows assessment of whether the incidence rate was accelerating, decelerating, or did not change after 1997. To determine the optimal change-point for incidence of NHL, the model was repeated for each year within the study period and Akaike information criteria (AIC) were compared. The year with the lowest AIC was considered the optimal change-point. This analysis utilized the Surveillance, Epidemiology, and End Results (SEER) 9 incidence data, which covers the time period 1973 -2010 (accessed using SEER*Stat software, version 8.1.2). **RESULTS:** From 1973 -2010, there were 239,118 total cases of NHL documented in SEER. The model estimated an increase in incidence of 1.9% per year prior to 1997, compared to an estimated increase of only 0.5% per year from 1997 -2010. Comparison of AIC's identified 1990 as the optimal change-point (annual incidence increase pre-1990: 2.4%; post-1990: 0.8%). **CONCLUSIONS:** The incidence of NHL in the US has been increasing fairly steadily since 1973, though it has been increasing more slowly in recent years, and nearly stabilized after 1997. In fact, this deceleration appears to have started around 1990, prior to the approval and availability of rituximab.

PCN23

INVESTIGATING SURVIVAL ASSOCIATED WITH ANGIOTENSIN BLOCKADE AGENTS IN PATIENTS WITH PANCREATIC CANCER

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OBJECTIVES: Pancreatic cancer is the 4thleading cause of adult cancer mortality in the United States with a 5-year survival rate of approximately 6%. ACE inhibitors and ARBs have been shown to inhibit tumor angiogenesis in pancreatic cells in both in-vitro and murine model studies. Previous research studies exploring a relationship between these agents and patients with pancreatic cancer used several different methods leading to unclear results. We conducted a large population-based study to examine overall survival differences in patients with pancreatic cancer taking ACE inhibitors or ARBs. **METHODS:** We used the Italian Emilia-Romagna Region (RER) health care database to conduct a retrospective cohort study following approximately 4 million adults (≥18) from 2003 to 2011. The RER database captures fully-linkable demographic, hospital discharge, outpatient pharmacy, and procedure codes for all residents of the region. Patients were classified by resection and metastases based on surgical procedures and secondary malignancies. We used a Cox-proportional hazard model for each time-dependent medication exposure to minimize potential immortal-time-bias. **RESULTS:** We identified a total of 8,281 patients diagnosed with pancreatic cancer from 2003 to 2011 in the RER. After adjusting for covariates, the Cox-proportional hazards model using time-dependent exposure suggested that, among pancreatic cancer patients, those exposed to ACE

inhibitors or to ARBs experienced a significantly decreased all-cause mortality risk as compared to those who were not (HR=0.90, 95% CI: 0.85 – 0.95 and HR=0.92, 95% CI: 0.86 – 0.98, respectively). **CONCLUSIONS:** Our population-based study showed that the use of ACE inhibitors and ARBs was associated with reduced overall mortality in patients with pancreatic cancer. Although modest, such benefits may be of great clinical importance because of the low overall survival rate seen in patients with pancreatic cancer and the relative safety of ACE inhibitors and ARBs. These relationships should be further examined in other populations using similar modeling techniques.

PCN24

BURDEN AND TIMING OF FIRST AND SUBSEQUENT SKELETAL RELATED EVENTS (SRES) IN UNITED STATES ELDERLY MEN WITH METASTATIC PROSTATE CANCER (MPC)

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OBJECTIVES: SREs are common in men with mPC and some individuals experience multiple SREs. We estimated the burden and timing of SREs in elderly men diagnosed with mPC. **METHODS:** We analyzed elderly men diagnosed with mPC between 2000-2009 in the SEER-Medicare datasets and followed through 12/31/2010 or until lost to follow-up. Post-diagnosis SREs were identified using claims that indicated spinal cord compression (SCC), pathologic fracture (PF), surgery to bone (SB), or radiation (RAD, potentially suggestive of bone palliative radiation). **RESULTS:** Among 8,997 mPC men with a median follow up of 18 months, 4,176 (47.7%) experienced at least one SRE. The median (mean) time from mPC diagnosis to first SRE was 154 (335) days. The median times from mPC diagnosis to first RAD, PF, SCC, or SB were 204, 96, 44, or 85 days, respectively. Of the 4,176 men who had at least one SRE, 2,619 (62.7%) had a subsequent SRE and 1,442 (35%) had a subsequent SRE of a different type. The median (mean) time from first SRE to any second SRE was 23 (108) days, while it was 21 (177) days from first SRE to second SRE of a different type. Subsequent SRE patterns varied considerably depending on the first SRE type. The majority of patients who experienced a PF or SCC first quickly had SB within 2 days or RAD within a month. **CONCLUSIONS:** The median time from first SRE to second SRE was considerably shorter than the median time from mPC diagnosis to first SRE, suggesting that once patients have had an SRE, it is quicker to develop subsequent SREs. Individuals who had a PF or SCC as a first SRE received RAD or SB within one month. These findings provide additional data to guide monitoring and prevention of SREs in the elderly mPC population.

PCN25

ESTIMATING YEARS OF LIFE LOST DUE TO ADVANCED MELANOMA IN 12 COUNTRIES

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OBJECTIVES: Advanced (stage IIIB/C and IV) melanoma is an aggressive, deadly disease and has a high detrimental impact on patients and society, primarily due to premature death. Understanding the burden of advanced melanoma is therefore important for health policy and allocating appropriate health care resources to treatment. There is limited data available specifically related to burden of advanced melanoma on patients. The aim of this study was to estimate years of life lost in patients with advanced melanoma in 12 countries. **METHODS:** Population growth and life expectancy were estimated from OECD data and country-specific life tables, respectively. Incidence and mortality data for advanced melanoma were collected from local cancer registries and GLOBOCAN 2008. Population growth and incidence rates by stage of disease were used to estimate the growth in the size of the melanoma patient population and new cases of advanced melanoma in 2014, respectively. Melanoma-specific mortality rates were used to estimate the number of patients surviving from previous years, to calculate prevalence, mortality and age at death for patients with advanced melanoma. Age and sex-adjusted life tables were subsequently used to estimate years of life lost for these patients. **RESULTS:** Years of life lost due to advanced melanoma per patient were as follows: Australia (men: 19.9 years, women: 22.7 years); Brazil (16.3, 19.8); Canada (19.4, 22.3); France (18.8, 23.1); Germany (18.3, 20.8); Italy (19.3, 22.7); Mexico (17.2, 19.0); the Netherlands (18.5, 21.5); Spain (19.2, 23.1); Sweden (19.4, 22.0); UK (18.7, 21.2); US (17.9, 20.6). Country differences were primarily driven by melanoma mortality rates and disease-free life expectancy. **CONCLUSIONS:** This study estimated the years of life lost due to advanced melanoma in 12 countries and found variations across countries and variations between sexes; however, the burden of advanced melanoma is substantial in all of the countries.

PCN26

MAMMOGRAPHIC DENSITY IN ASSOCIATION WITH SMOKING STATUS AND SMOKING HISTORIES IN A SAMPLE OF POSTMENOPAUSAL WOMEN: RESULTS FROM A CROSS-SECTIONAL STUDY

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OBJECTIVES: Tobacco contains numerous carcinogens, including several known to cause mammary tumors in animal models. Our study aimed to investigate whether mammographic density (MD), a recognized risk factor associated with breast cancer, is influenced by smoking history. **METHODS:** This was a cross-sectional study of postmenopausal women attending a clinic in Western New York, to undergo mammographic assessment. Eligible participants included women without cancer, no recent use of hormone-replacement therapy, and no history of breast augmentation or breast reduction surgery. A self-administered questionnaire was used to obtain information on demographics, anthropometry, and breast cancer risk factors. Percent density (PD) was measured using computer-assisted assessment of mammographic films. General linear models were used to test for differences in PD by smoking variables while adjusting for selected covariates (age, body mass index, age at first live birth, age at menopause, use of hormone therapy, level of education, and family history of breast cancer). **RESULTS:** Study participants (n=229) included 125 never-smokers, 87 former smokers, and 17 current smokers. Current smokers had a lower mean percent density (SE) compared to non-current smokers and former smokers (29.6 (5.1) vs. 34.8 (3.9) and 37.5 (4.1) p=0.09). Among ever smokers, age at smoking initiation was inversely associated with percent density (P=0.002). No significant associations were observed for the other smoking variables. **CONCLUSIONS:** Younger age at smoking initiation is associated with higher PD while current smoking is associated with lower PD. These findings suggest that smoking may have differential effects on risk of postmenopausal breast cancer depending on the timing of exposure.

PCN27

APPLYING DATA ANALYTICS TO VALUE-BASED CANCER CARE: EFFECTS AND COST OF HOSPITAL REENCOUNTERS FOLLOWING CANCER SURGERY

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OBJECTIVES: Surgery is a standard modality in the modern management of solid tumors. Unfortunately, some patients will experience unplanned readmissions and ED visits following their operation. Emerging trends in health reform have introduced new financial detriments to hospital reencounters in addition to the negative impact on quality of care. Our objective was to develop an electronic approach to assessing unplanned hospital reencounters following common cancer operations in order to guide decision-making aimed improving value in our patient population. **METHODS:** The target population for this study was adult cancer patients undergoing mastectomy and colectomy operations for cancer. Data were abstracted using an Electronic Data Warehouse (EDW) to determine 30-day emergency department visits and hospital readmissions following the selected cancer operations. The secondary outcome measure was cost of care for patients returning to the hospital within 30-days. **RESULTS:** Among 105 patients undergoing selected breast and colon cancer operations from January 1, 2012 to December 31, 2012 the hospital reencounter rate was 11.9%. Wound-related complications were responsible for 73% of these hospital reencounters. Total costs (direct and indirect) for hospital reencounters were $210,722.76. **CONCLUSIONS:** Unplanned hospital readmissions and emergency department visits following cancer surgery largely result from postoperative complications. These unplanned reencounters are a costly source of poor quality care. Patient-centered, disease-specific efforts to reduce unplanned hospital reencounters have the potential to significantly increase quality while decreasing costs. Using data for decision-making in quality improvement is important for achieving value in patient care.

PCN28

BEVACIZUMAB-BASED CHEMOTHERAPY AND THROMBOTIC EVENTS RISK IN COLORECTAL CANCER PATIENTS: A META-ANALYSIS STUDY OF RANDOMIZED CONTROLLED TRIALS

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OBJECTIVES: Bevacizumab is a recombinant, humanized monoclonal antibody that hinders the proliferation of new blood vessels in malignant cells. It plays an important role in the management of colorectal cancer; however, there is concern about its association with the development of thrombosis. The purpose of current study was to address the overall risk of thrombotic events in colorectal cancer patients treated with Bevacizumab-based chemotherapy as well as the risk of both arterial and venous thrombotic events separately. **METHODS:** PUBMED/MEDLINE database was searched to find relevant clinical trials that published in English language between the periods January 1st, 2003 and December 31st 2013. Only randomized control trials (RCTs) that compared non-Bevacizumab to Bevacizumab-based chemotherapy regimen for the treatment of colorectal cancer and reported thrombotic events were included. The relative risk (RR) with 95% confidence intervals of thrombotic events was calculated. Because between-study heterogeneity was insignificant, the fixed effect model was used to calculate the estimated effect sizes. **RESULTS:** There were a total of 22 randomized clinical trials that have met our search criteria with a total of 12,852 patients used for safety analysis calculations. Based on our findings, there is a significant risk of overall thrombotic events in Bevacizumab vs control treated group RR = 1.315 (95% CI 1.165-1.483, P = <.0001). In terms of venous thrombosis, there is a significant risk in Bevacizumab treated patients with a RR = 1.256 (95% CI 1.097-1.43, P = 0.0019) compared to control. Finally, a higher risk of arterial thrombosis in patients used Bevacizumab vs control treated groups RR = 1.635 (95% CI 1.1802.264, P = 0.0065). Sensitivity analyses showed no significant differences. **CONCLUSIONS:** Bevacizumab-based chemotherapy is significantly associated with the development of thrombotic events either as venous or as arterial thrombosis. Health care providers are encouraged to consider thrombosis prophylaxis regimen and periodically monitoring their patients.

PCN29

ASSOCIATION BETWEEN CARDIOVASCULAR DRUGS AND COLON CANCER

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OBJECTIVES: To determine if cardiovascular (CV) drugs are associated with an increased risk of colon cancer (CC) & if the risk for any individual agent differs from